IN THE CLAIMS

Please amend the claims as follows:

1. to 39. (canceled)

40. (previously presented) A method of enhancing a nucleic acid polymerase reaction comprising, in any appropriate order:

(a) mixing a nucleic acid sequence template for a nucleic acid polymerase with at least one nucleic acid polymerase; and

(b) adding to (a) a polymerase enhancing composition comprising at least one component possessing nucleic acid polymerase enhancing activity selected from:

an isolated or purified naturally occurring protein, possessing polymerase enhancing activity, obtained from a bacterial, eukaryotic, or archeabacterial source;

a wholly or partially synthetic protein having the same amino acid sequence as the naturally occurring protein or analogs thereof, possessing polymerase enhancing activity;

polymerase-enhancing mixtures of one or more of the naturally occurring proteins, or wholly or partially synthetic proteins;

polymerase-enhancing protein complexes of one or more of the naturally occurring proteins, or wholly or partially synthetic proteins; and

polymerase-enhancing partially purified cell extracts containing one or more of the naturally occurring proteins.

41. (original) A method according to claim 40, wherein said reaction is a replication reaction.

42. (original) A method according to claim 40, wherein said reaction comprises an amplification reaction.

43. (original) A method according to claim 40, wherein said reaction comprises a PCR process or RT-PCR process.

44. (previously presented) A method of any one of claims 41, 42, or 43, further comprising at least one of:

a site-directed mutagenesis process,

a cycle sequencing process, and

a cloning process.

45. to 68. (canceled)

69. (previously presented) A method of enhancing a nucleic acid polymerase reaction comprising adding a P45 protein to a polymerization reaction, wherein the P45 protein is in monomeric, dimeric, or multimeric form, and wherein the P45 protein is produced from a cell containing a DNA construct comprising a sequence encoding PEF protein P45 operably linked to an expression vector.

70. (original) A method of enhancing a nucleic acid polymerase reaction as claimed in claim 69, wherein the P45 protein is present in a PEF complex.

71. (canceled)

72. (original) A method for controlling the activity of a polymerase in a polymerization reaction, comprising changing the amount of dUTP present or generated during the reaction by adding a PEF activity.

73. (canceled)

74. (previously presented) A method according to claim 72, wherein the PEF activity comprises a P45 protein, wherein the P45 protein is in monomeric, dimeric, or multimeric form, and wherein the P45 protein is produced from a cell containing a DNA construct comprising a sequence encoding PEF protein P45 operably linked to an expression vector.

75. - 94. (canceled)